

Please amend the claims as follows:

1. *(Amended)* A method for analyzing the capacity of an application executing on a parallel processing system and expressed as a graph of vertices, comprising the steps of:
 2. (a) creating a description of the sizes of data records throughout the graph;
 3. (b) creating a performance description of each vertex in the graph;
 4. (c) determining an execution time for each vertex in the graph;
 5. (d) determining counts of data records assigned to corresponding vertices in the graph;
6. and
 7. (e) [creating] outputting a description of the total execution time and performance of the
8. system based on the determined execution time and counts of data records.
1. 2. *(Amended)* The method of claim 1 further comprising the steps of:
 2. (a) creating multiple descriptions of the total execution time and performance of the
3. system based on multiple input data sets; [and]
 4. (b) creating a comparison of the multiple descriptions; and
 5. (c) outputting such comparison.
1. 3. *(Amended)* A method for analyzing the capacity of an application executing on a parallel processing system and expressed as a graph of vertices and links given a set of supplied values, comprising the steps of:
 2. (a) creating a description of the vertices and links of the graph including connections
3. between vertices and links, data processing rates, and amounts of data;
 4. (b) generating performance characteristics of the application based upon the description,
5. and the set of supplied values, including total execution time, resource requirements,
6. and capacity of the application;
 7. (c) providing a means such that the supplied values can be altered, creating altered
8. values; [and]
 9. (d) re-generating performance characteristics of the application based on the altered
10. values; and
 11. (e) outputting such performance characteristics.

1 4. *(Amended)* The method of claim 3 further comprising the steps of:

2 (a) accepting multiple sets of supplied values;

3 (b) generating performance characteristics of the application for each set of supplied

4 values;

5 (c) calculating sets of estimated values by applying trend equations to the multiple sets

6 of supplied values;

7 (d) generating performance characteristics of the application based on the estimated

8 values; and

9 (e) [displaying] outputting the performance characteristics based on each set of supplied

10 values and based on the estimated values.

1 5. *(Amended)* A method for analyzing the capacity of an application executing on a parallel

2 processing system and expressed as a graph of vertices and links given a set of supplied

3 values, comprising the steps of:

4 (a) creating a description of the vertices and links of the graph including connections

5 between vertices and links, data processing rates, and amounts of data;

6 (b) generating performance equations based upon the description which will calculate

7 performance characteristics of the system including total execution time, resource

8 requirements, and capacity of the application;

9 (c) applying the performance equations to the supplied values;

10 (d) providing a means such that the supplied values can be altered, creating altered

11 values; [and]

12 (e) applying the performance equations to the altered values; and

13 (f) outputting the results of the applied performance equations.

1 6. *(Amended)* The method of claim 5 further comprising the steps of:

2 (a) accepting multiple sets of supplied values;

3 (b) applying the performance equations to each set of supplied values;

4 (c) generating trend equations based upon the multiple sets of supplied values;

5 (d) calculating sets of estimated values by applying the trend equations to the multiple

6 sets of supplied values;

7 (e) applying the performance equations to the estimated values.; and

8 (f) providing a means of [displaying] outputting the supplied values, the estimated

9 values, and stored results.

10 7. *(Amended)* A computer program for analyzing the capacity of an application executing on

11 a parallel processing system and expressed as a graph of vertices and links given a set of

12 supplied values, the computer program being stored on a media readable by a computer

13 system, for configuring the computer system upon being read and executed by the computer

14 system to perform the functions of:

15 (a) creating a description of the vertices and links of the graph including connections

16 between vertices and links, data processing rates, and amounts of data;

17 (b) generating performance characteristics of the application based upon the description,

18 and the set of supplied values, including total execution time, resource requirements,

19 and capacity of the application;

20 (c) providing a means such that the supplied values can be altered, creating altered

21 values; [and]

22 (d) re-generating performance characteristics of the application based on the altered

23 values; and

24 (e) outputting such performance characteristics.

1 8. (Amended) The computer program of claim 7 further comprising the functions of:

2 (a) accepting multiple sets of supplied values;

3 (b) generating performance characteristics of the application for each set of supplied

4 values;

5 (c) calculating sets of estimated values by applying trend equations to the multiple sets

6 of supplied values;

7 (d) generating performance characteristics of the application based on the estimated

8 values; and

9 (e) [displaying] outputting the performance characteristics based on each set of supplied

10 values and based on the estimated values.

1 9. (Amended) A computer-readable storage medium, configured with a computer program for

2 analyzing the capacity of an application executing on a parallel processing system and

3 expressed as a graph of vertices and links given a set of supplied values, where the storage

4 medium so configured causes a computer to operate in a specific and predefined manner to

5 perform the functions of:

6 (a) creating a description of the vertices and links of the graph including connections

7 between vertices and links, data processing rates, and amounts of data;

8 (b) generating performance characteristics of the application based upon the description,

9 and the set of supplied values, including total execution time, resource requirements,

10 and capacity of the application;

11 (c) providing a means such that the supplied values can be altered, creating altered

12 values; [and]

13 (d) re-generating performance characteristics of the application based on the altered

14 values; and

15 (e) outputting such performance characteristics.

1 10. (Amended) The computer-readable storage medium of claim 9 further comprising the
2 functions of:
3 (a) accepting multiple sets of supplied values;
4 (b) generating performance characteristics of the application for each set of supplied
5 values;
6 (c) calculating sets of estimated values by applying trend equations to the multiple sets
7 of supplied values;
8 (d) generating performance characteristics of the application based on the estimated
9 values; and
10 (e) [displaying] outputting the performance characteristics based on each set of supplied
11 values and based on the estimated values.

Please add the following claims:

1 11. A computer program, stored on a computer-readable medium, for analyzing the capacity of
2 an application executing on a parallel processing system and expressed as a graph of vertices
3 and links given a set of supplied values, the computer program comprising instructions for
4 causing a computer system to:

5 (a) create a description of the vertices and links of the graph including connections
6 between vertices and links, data processing rates, and amounts of data;
7 (b) generate performance characteristics of the application based upon the description,
8 and the set of supplied values, including total execution time, resource requirements,
9 and capacity of the application;
10 (c) provide a means such that the supplied values can be altered, creating altered values;
11 (d) re-generate performance characteristics of the application based on the altered values;
12 and
13 (e) output such performance characteristics.

1 12. The computer program of claim 11, further comprising instructions for causing the computer
2 to:
3 (a) accept multiple sets of supplied values;
4 (b) generate performance characteristics of the application for each set of supplied
5 values;
6 (c) calculate sets of estimated values by applying trend equations to the multiple sets of
7 supplied values;
8 (d) generate performance characteristics of the application based on the estimated values;
9 and
10 (e) output the performance characteristics based on each set of supplied values and based
11 on the estimated values.

